

REPORT

Wellesley College Training Camp

AN EXPERIMENT STATION

FOR THE

WOMAN'S LAND ARMY
OF AMERICA, Inc.

EDITH DIEHL
Director

ADVANCE EDITION
1918

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Camp Director in Chief.....	<i>Miss Edith Diehl</i>
Camp Physician and Director of Sanitation and Hygiene	<i>Dr. Katherine Raymond</i>
Camp Commissary and Household Manager.....	<i>Miss Stona Holdahl</i>
Camp Science and Placement.....	<i>Colonel N. H. Hall, U. S. Marines</i>
Camp Construction and Building Instructor.....	<i>Mr. J. B. Davison</i> Rindge Training School
Camp Agricultural Director.....	<i>Prof. J. A. Foord</i> Mass. Agric. College
Camp Farm and Machinery Specialist.....	<i>Prof. C. I. Gunness</i> Mass. Agric. College
Camp Garden Specialist.....	<i>Prof. H. F. Thomson</i> Mass. Agric. College
Camp Garden Director	<i>Mr. Harold D. Phelps</i> Mass. Agric. College
Camp Psychological Investigator	<i>Dr. Hermione Dealy</i>
Camp Consulting Efficiency Specialist.....	<i>Major Frank B. Gilbroth</i>
Camp Drill Master	<i>Sergeant Young</i> Charlestown Navy Yard
Camp Motor Instructor.....	<i>Dr. Marion Nute</i>

DIRECTOR'S REPORT

To the Board of Trustees of Wellesley College:

In submitting my report of the Wellesley College Training Camp and Experiment Station for the Woman's Land Army of America, I wish first to explain my delay in delivering this Report into your hands, and to express my appreciation of the consideration shown me by President Pendleton, in not urging me to greater haste in the matter. The delay was due to difficulties incident to getting my accounts settled and proper drawings and specifications made for the accompanying statistical records. These records I believe to form the most valuable part of my report, and I have strongly felt that I owed it to Wellesley College to issue them to you in the most accurate and serviceable form for possible use by the Woman's Land Army.

INCEPTION OF TRAINING CAMP

The inception of the Training Camp had its impetus last Spring, in a realization that the new Woman's Land Army had a specific task to perform, and that to succeed, it must meet this definite task in a definite, business-like manner. The accepted plan of putting women on the land in groups, and operating through the so-called Unit system had not been thoroughly developed, and as these Units were put into the field during the early months of 1918, there appeared to be many points in connection with organization and administration, that should be settled in a scientific manner. The pioneer Bedford Land Army Camp and several other camps in different states had solved a great many problems and had blazed the way, demonstrating both the possibility of using untrained women workers to augment the labor shortage, and the feasibility of the Unit plan of operation.

However, it became evident to several members of the Land Army Executive Committee that it was both uneconomical and inefficient to require each Unit to work out certain details for itself that could be worked out in a central experiment station, and put into available form for use throughout the country. The needless duplication of effort, and the possibility of failure in camps where limited opportunities were offered for solving various problems of housing, feeding and equipment, seemed to handicap the Land Army movement in trying to extend its usefulness in a speedy and National manner. The lack of able leaders for the camps was also evident, and it became obvious that leaders must be trained for the work and instructed in certain matters pertaining to Land Army policy, as well as in camp organization, management and discipline.

With this understanding of the need of the Land Army, I accepted the invitation of President Pendleton to act as Director of the Wellesley College Training Camp and Experiment Station, which was commissioned by the Woman's Land Army National Board to undertake a piece of scientific investigation into conditions governing camp organization and maintenance, and to train a limited number of women for Unit leadership.

PRELIMINARY ORGANIZATION

At my request, an Executive Committee was appointed in July by President Pendleton to assist me in the matters of policy and government, and an Advisory Committee was appointed to act as moral supporters of the undertaking, and to lend their aid in contributing suggestions and information needed in the organization and operation of the Training Camp.

During the month of July, the definite plans for the Camp were formed in frequent consultation with the Executive Committee. This Committee assisted me very materially in the preliminary work of the Camp organization, and it was only with their assistance that I was able to organize the Camp in so short a time. I also consulted various members of the Advisory Committee from time to time, and to President Butterfield of the Massachusetts Agricultural College, and to Miss Elizabeth Poe of the National Service School, the Camp owes much for very definite contributions.

One of the most difficult tasks in the beginning, was that of securing the personnel of the Camp Staff. Our policy was to have represented on the Staff, only experts in the subjects to be considered. A list of the Staff accompanies this Report; and while each member of the Staff contributed in no small way to the success of the Camp, I feel that to Dr. Raymond and to Miss Holdahl we owe our greatest debt of gratitude.

Owing to the work to be done in establishing the possibilities and the limits of women's physical strength in farm work, I considered from the outset, that a practical medical woman should be a part of the Camp resident Staff, and we finally secured the services of Dr. Raymond, who volunteered her assistance throughout the term of the Camp, and guided me in all matters pertaining to the health of the women, and to the Camp sanitation. I shall refer later to the results accomplished under Dr. Raymond's direction.

One of the greatest contributions we hoped to make through the Camp experiment was in the matter of suitable and satisfying food for the workers. Balanced rations had been worked out for the Army, and much valuable data had been prepared by the Food Commission, but so far as we know, no balanced ration had been scientifically worked out for women farm-workers. Coincident with the question of balance in ration, was the matter of compliance with the prevailing food regulations and the matter of economy. In Miss Holdahl, I found a trained dietitian who was a household economist and a practical food producer as well. Through her tireless study and her ready cooperation in the experiment, I am able to submit a list of Camp menus compiled with the above specified objects in view, together with various recipes necessary for producing the dishes enumerated, and a report concerning the cost per person per day.

While securing the Camp Staff, the business of procuring candidates for training, of choosing a suitable Camp site, and of purchasing Camp equipment and supplies, was proceeding.

Circulars were sent throughout the country, and the greatest effort was made to register applicants representing various degrees of training and a wide difference in ages. Our object was to provide material for experimenting in regard to the desirable qualities of leaders, to investigate the capacity of women workers on the land, and to define the physical requirements for such work. Through the entire course it will be noted that we were both experimenting and training, and in fact it may be said that the training was the secondary object of the Camp. We feel, however, that while the course in training was often sacrificed for the sake of developing some scientific result, the candidates were more than compensated by sharing in the experiments undertaken.

The Camp site had been selected by President Pendleton and myself, in consultation with Colonel Hall of the United States Marines, and commanding officer of the Charlestown Navy Yard. It was chosen with due consideration of the matter of drainage and other physical features prescribed by our Government as necessary for a healthy and convenient site. The United States Marines responded with characteristic despatch to our request for their assistance as advisors. Commandant Rush detailed Colonel Hall to us at once, and after several visits to Wellesley for the purpose of perfecting all sanitation plans, construction plans, and plans for suitable equipment, Colonel Hall detailed Captain Agnus Wilson and Sergeants Young and Walker to direct and assist in the actual construction work. These three officers were in constant attendance at the Camp for the two weeks of Camp construction, and both Captain Wilson and Sergeant Young visited us frequently during the whole Camp term, advising us in various matters, and inspecting us, in accordance with strict military standards.

During the month of July, various trips were made by the Director to consult with experts in the matter of equipment. Many lists obtainable from different Land Army camps were procured, lists were made up through consultation with camping experts, our Government camp equipment lists were obtained and studied, and the splendid lists of the National Service School formed a sort of basis for the final equipment decided upon. Colonel Hall had many valuable suggestions which were incorporated into our plans, and the furniture of the sleeping tents reproduced the regular army or marine furniture. At first thought we were inclined to make the tents more "home-like" in appearance, but were saved from this mistake by our expert adviser.

We made a very interesting experiment in the matter of beds which will be noted later in a summary regarding equipment, and owing to the prohibitive price of canvas, at the time we outfitted our Camp, we chose tents made of duck instead of canvas as prescribed by our United States Army regulations. In all other respects our tents were essentially like the United States Army tent, and while we were

unable to demonstrate the life of a duck tent, we successfully proved (contrary to the advice of many), that duck tents, with flies, are weather proof, in New England climate at least; and it may be of interest to add, that during the month of September we suffered days of very wet weather.

OPENING OF CAMP

We opened Camp on August first with thirty-two women registered. It was determined by us at the outset that we should limit the size of the Camp, and so far as possible register candidates of divers ages and occupations, coming from various parts of the country. The enrolled candidates ranged in age from twenty-one to forty-five, and represented fourteen different states. Among our number were five married women, one Ph. D., one author of a text-book, several owners of farms, and a number of young women with no regular occupation. Eleven of the women were College graduates, and two were undergraduates.

Since a part of our course in training consisted in having the women actually construct the Camp buildings, pitch the tents, put in the water supply, and build the whole Camp, we were housed, during the first two weeks, in what we called barracks, awaiting the completion of this work. Norumbega Hall was assigned to us for the purpose, and although we were not able to begin cooking for ourselves until we got into our Camp quarters, the women cleaned and kept their own rooms, and attended to serving at table. We at once instituted a system of leadership among the women, and this system prevailed throughout the course, and constituted a most valuable part of the training.

The first day was spent in registration and physical examinations. Three of our candidates were unable to report for the course, one was disqualified for physical unfitness, and another was dropped after the first fortnight for the same reason, making a total of twenty-seven women in Camp. Our physical examination was very complete and was carefully conducted by Dr. Raymond and her assistant. It was most important that we should know thoroughly the physical condition of each woman in order to make the comparative tests of endurance and fitness that were a part of our experiment. With this report is a sample medical examination card used in the Training Camps, which was carefully prepared by Dr. Raymond, and which we recommend for use in the Land Army. We are aware that the examination may appear too detailed at first thought, but we consider that nothing less than a thorough examination is safe, before admitting girls to labor in the field, and we furthermore believe that the Land Army should insist upon such complete records, in order to protect itself from possible later complications and against charges relating to the undermined health of the workers, that could not be refuted without recourse to some such records.

DESCRIPTION OF CAMP CONSTRUCTION

Before outlining the Course, I will describe the Camp and outline the details of construction. The type of our Camp was not accidental. The usual Land Army camp was housed in an old building, sometimes with tents as adjunct sleeping quarters. But it might be that a Unit would be needed in some district where no vacant building was available. This sort of Unit must be provided for; and since it involved all the problems of the Unit housed in buildings, with many additional problems, we purposely decided to have our Camp represent that type which could not utilize any buildings, but must be built from the ground up. Thus we set ourselves the most difficult task in Land Army camp construction and organization; and the various questions of economy, efficiency, and comfort, served to make the problem one of great interest, and offered many opportunities for original and ingenious solutions.

The construction of the Camp occupied a period of two weeks and two days. Owing to a few days of excessive heat, when it was impossible to put in full time working in the hot sun, we were two days behind schedule. Under the direction of Captain Wilson the Camp was placed in accordance with the scientific methods used in the Navy, with due consideration of the matter of prevailing winds, and with the tents lined up so that the breeze would blow through them from end to end. Two rows of tents were pitched facing each other, being of uniform distance apart and separated by a broad street running between the rows from one end to the other. At the head of this street on one side was placed the Administration Tent, with the American colors planted in front of it. On the other side, and a little beyond the Administration Tent, our Mess Hall and Kitchen were set up in a position so related to the Camp that all odors of cooking were carried away from us. At the foot of the street stood our Bath-house, and about fifty yards from the Bath-house, the Latrine was constructed. With the careful selection of the site for our Incinerator for burning all refuse, and with the designation of several "sinks" or drains for caring for our draining, our Camp placing was complete.

Under the direction of Mr. J. B. Davison of the Rindge Training School of Mechanic Arts of Cambridge, and with the aid of two carpenters, the women constructed the four wooden buildings, several tables, and all the wooden tent floors. The Mess Hall was built after a plan adapted from a type of Mess Hall used in our Army. In order to meet the Land Army needs, we constructed it in sections, any one of which four women could handle, and made of it a sort of portable building. The Kitchen and Pantry were of similar construction, and these were attached to the Mess Hall after the plan of the National Service Camp. The Bath House and Latrine were both constructed along lines prescribed for use by the Marines. These buildings were modified to meet the needs of the Land Army Camp, but the many points so well considered and found practical by our Government were carefully incorporated in them.

During the process of construction we found at once the value of the system of leadership that had been put into operation. The Camp members had been divided into three squads of about eight each. Over each squad was appointed a leader, and a Supervisor was appointed over the entire Camp. The Supervisor had charge of directing all the affairs of the Camp, and on her rested the responsibility of assigning girls to their duties. Supervisors and Squad-leaders were appointed by the Director for a term of three days, and were succeeded by an entirely different group of women to perform the same duties. The object of this rotation was to test each girl's ability to lead, and to develop her powers along the line of leadership by friendly criticism and by first-hand experience. Plans for the day were made by the Director and put into the hands of the Supervisor, who in turn posted them on a Bulletin Board and translated them to her Squad-leaders. The workers learned to consider their Squad-leader authority and soon ceased to dispute or question a given order. The Squad-leaders also learned to show proper respect for the authority of their Supervisor, and appeals over the head of the Supervisor to the Director became less frequent as the work progressed, and finally ceased.

This lesson of discipline proved most needed and very valuable. The systematic division of the workers into groups headed by recognized Squad-leaders with a directing leader over all, reduced the confusion in executing the work, and made for efficiency and dispatch. A nice spirit of unquestioning and ready response was developed towards those in authority, and the Camp became a cheerful co-operative society of working women.

During the progress of Camp construction, each woman was shifted from one sort of work to another to give her an idea of the whole; and while one squad was nailing up the siding of a building or digging the ditches for the latrine, incinerator or sinks, another squad was hauling stone or receiving instruction in the handling of a plane or saw, or learning for the first time the name of a Stilson wrench and its use in pipe-laying.

Our water supply came from making connection with a College hydrant about one hundred feet away, and two squads of women cut the pipe-threads, put in the necessary unions, wiped the joints, and laid the one hundred feet of pipe in less than a day, under the direction of Mr. Davison and Sergeant Young.

In showing the women how to do this construction work, there was no intention of trying to complete even a short course in carpentry or plumbing, but the training was designed to give the women some real knowledge of the conformation of buildings and of sanitary arrangements, and to make them somewhat intelligent about building processes and rid them of the awe connected with a job cerning which they were ignorant. Whether the Land Army Camps are quartered in tents or in houses, or in both; the conditions of sanitation must be considered, and the problems of having to utilize the services of inexpert labor must be met. We believe that every woman who has gone through this Camp construction experience, fortified with the blue-print plans that accompany this Report, should be capable of ably directing the erection of a Land Army Camp, and should be fairly independent of the incapable and often unprocurable workmen.

DESCRIPTION OF COURSE

The course in training might be divided into four distinct periods, each covering about a fortnight. The general aim of the course was to familiarize the women with conditions they would meet in running Units, and to train them to master the difficulties presented by these conditions.

FIRST PERIOD

Camp Construction

The first period covered the work of Camp construction which has been described above. Throughout, the course lectures or "talks" were fitted into hours when it seemed advisable to change the kind of work being done, and during these first weeks the lectures were frequent. One of the underlying principles of teaching adhered to in carrying on the course, was the principle of making theory and practice go together. In so far as possible, the lectures were given in the field. If the subject were sanitation, the place was where the sanitary construction could be pointed to and observed. If the subject were motors, or first-aid, or tractors, or tool handling, the talk was given with a demonstration of motors, of bandages, or of tractors or tools; and it was given in the open, where the processes talked of had a natural and more vivid setting. A list of the lectures given during the course, together with a detailed outline of the course, will be found appended to this Report.

SECOND PERIOD

Garden Making

The second period of our training was occupied with the processes of garden making and tool handling. The course was laid out by Professor Andrew S. Thomson of Amherst, after consultation as to the objects sought and the ground to be covered. Professor Thomson detailed Mr. Harold D. Phelps of the Massachusetts Agricultural College extension service to demonstrate the work, and Mr. Phelps took the women through the various processes as outlined, giving lectures on soils and fertilizers, and on the theory of crop growing and tool handling, awakening much interest and calling forth many questions.

In demonstrating the care and the handling of tools, and the proper manner of turning over the sod and performing the other garden operations, we made the work as practical as possible. The simple demonstration of how to sharpen a hoe, and the difference between the work done with a sharp and a dull hoe, won the women to a realization of the great importance of care in little things. It was by such object lessons as these, that our course was made both practical in its immediate application, and at the same time served the purpose of reinforcing some of the general principles which we were seeking to establish.

EXPERIMENTS REGARDING EFFICIENCY AND FATIGUE

The course was demonstrated in the College farm gardens, by courtesy of Mr. Woods, Supt. of College Grounds, and the various operations were practiced between lessons by the women under the supervision and direction of Dr. Hermione Dealy, who was there for conducting experiments to establish the following facts:

- (1.) The frequency and length of rest periods necessary for women, in order to accomplish the most work with the least fatigue.
- (2.) The difference in the amount of work accomplished when rest periods are taken and when they are not taken.
- (3.) The difference in the amount of work accomplished after and before being instructed in the scientific way of handling a tool, and of performing a given operation.
- (4.) The best physical positions in performing various kinds of work and the development of such a manner of working as to eliminate waste motion.

I consider Dr. Dealy's report of so much intrinsic worth that I am submitting it in its entirety, and I believe it contains much material that might be of inestimable value in establishing a code for Land Army workers. Dr. Dealy's conclusions are given in detail in her report, together with a full description of the experiment under her direction. It was due to the efforts of Mrs. Benjamin Howes of our Executive Committee that Dr. Dealy's services were procured, and I feel that the result of these experiments stands for an accomplishment of which Wellesley may justly be proud. The limited time and imperfect conditions, made it impossible to complete the work, but the investigation was in itself most important in its bearing on the subject of woman's possibilities and limits in working on the land, and it represents a scientific excursion into an entirely unexplored field, and at least constitutes a beginning in determining proper conditions and hours for women in farm work.

The experiments were performed through observing the same group of women working at the same kind of work, for the same length of time, under different working conditions. The results were compared; and briefly quoting from Dr. Dealy's report, the conclusions are as follows:

- (1.) In regard to the frequency and length of rest periods, it is suggested that about ten minutes' rest every hour is a proper amount, and it was concluded that the "warming up" period may be reduced to a minimum and that good intensive relaxation during rest periods, eliminates in large measure the bad effects of cumulative fatigue and keeps the worker in a more cheerful condition. Our experiment points to the conclusion that in agricultural work, the greatest efficiency and least fatigue result from frequent short rest periods, rather than fewer long ones. Though we do not feel that we have made an exhaustive investigation, our results point strongly in the direction just suggested, and we are confident in advising some definite rest periods for women in this work.
- (2.) In regard to the amount of work accomplished with or without rest period, it was found that groups of workers having a ten minutes' rest every hour, accomplished more than groups working steadily for the same length of time without rest.
- (3.) The amount of work accomplished by the worker after being instructed in the scientific way of handling a tool and in the scientific method of procedure was appreciably greater in most cases than the output before learning these methods. In a few cases the output was nearly doubled.

(4.) **Physical Positions:**

(a) **In Weeding**

A squatting posture, with shifting of weight first on one foot and then on the other, proved the least tiring and the most convenient posture. A half-standing position was found to strain the back, and should be avoided. Both hands could be used in weeding advantageously without undue fatigue.

Working in pairs was found to accomplish the most work with less fatigue reaction than working singly.

(b) **In Spading**

The correct position as taught by Mr. Phelps is as follows: The right hand grasps the handle of the spade from beneath, the left foot is placed on the left side of the blade, and the left hand grasps the shank of the handlebar from beneath. As the body bends forward so as to fling a maximum pressure of weight upon the blade, the left hand slides upward towards the handle. This position was found most effective and least fatiguing, though there was a tendency to remove the left hand from the handle, putting it over the right hand in attempting to get more weight into the work.

Spading should be done along vertical lines. The dirt when thrown should be (1) turned over so that the upper soil lies underneath, and (2) at a distance from the trench line which allows one-half the dirt to slide down into the trench. This trench should be kept well defined so that the worker may continue in a straight line and not confuse earth which has been spaded with unspaded earth. Depth is acquired by inserting the entire blade into the soil. A smooth surface is gained by breaking the lumps of dirt with the side of the spade after the dirt has been thrown. The physical strength of the worker should regulate the amount of dirt lifted with the spade.

(c) **In Hoeing**

The worker stands in an upright position, grasps the handle of the hoe with the right (or left) hand at the top and from above. The left (or right) hand grasps the handle from beneath at a comfortable distance below the other hand. The worker, with scarcely any bending over, progresses with the hoe ahead of her, instead of walking around in a circle with it, and works always with a sliding motion of the blade from left to right (or vice versa, if the worker is left handed). As she progresses, the blade is practically level with the soil and is therefore in a good position to cut the weeds and loosen the dirt easily. The process of hoeing appeared to be too simple to command careful adherence to instructions, and the result was many complaints of strained backs. The desire to reach out after the next plant, instead of hoeing the plant within easy and proper range, proved also a source of fatigue. The standard motion in hoeing was found to be neither slow nor fast, but a steady mean between the two. Failure to regulate the speed of work to the eight-hour duration of performance, caused a number of short-time workers.

One of the subjects under consideration during these experiments was in regard to the necessity of having tools of special size for women. We concluded that the ordinary sized tool was none too heavy for women to handle when they learned the professional method, and that to lighten the tool would in many cases have the effect of decreasing its efficiency; and the extra effort involved in trying to make a light tool accomplish the work of the standard tool, would in the end defeat the purpose of changing the tool weight.

Dr. Dealy's experiments embraced also certain psychological studies which I will mention later in discussing the general experimental

aspect of our undertaking. I have referred here only to that part of her work which deals directly with the training of the woman in garden operations.

During this second part of the training there were also demonstrations in the use of tractors. Three different makes of tractor were demonstrated, and each woman in Camp served her apprenticeship in tractor driving. My opinion is that few women are physically fitted to drive tractors, though some of our workers believed themselves quite able. The strain on the muscular system is very great, in handling certain types of tractor, and the frequent and intense joltings, I believe, might be injurious to women. Moreover, though a woman may drive a tractor for a half hour without excessive fatigue, I question the possibility of many women driving tractors over our Eastern fields as a part of their regular farm work.

As Mr. Phelps had experienced several delays in conducting the home garden course, exercises VI. and VIII. had to be omitted, and we passed on to the next phase of our training without covering this part of the work.

LECTURES ON EFFICIENCY

In connection with this part of the course, Dr. Gamble of Wellesley College gave the women two lectures on Practice and Fatigue. Dr. Gamble defined the processes of learning, discussed the power of association, emphasized the importance of attention and repetition, and outlined the meaning of practice, showing how it eventually developed speed and accuracy. She also pointed out the causes of fatigue, defined the symptoms, and warned against its cumulative effects.

Dr. Gilbreth also contributed a lecture on the subject of the learning processes and fatigue causes and reactions, and interested the women to experiment independently along the line of efficiency methods in their work. During the course, as a result of this lecture, a number of women came to me with suggestions of improved methods in doing things, and the theory of eliminating waste motion was put into practice at once in our household work.

In addition to these lectures, we had the unusual opportunity of seeing the lantern slide pictures of Major Frank Gilbreth's experiments in the world of motion study, and of listening to his interpretation of these motion pictures. Major Gilbreth gave us a most interesting exhibition of faulty and perfect motions in working operations, and outlined for us some of the general principles of efficiency methods.

Object of Training in Garden Processes

Spending these two weeks in learning garden processes and tool handling, as a part of a supervisor's course may seem at first thought far-fetched and superfluous. But our object was first to give these women who were to look after the welfare of the farm workers some idea of the actual work of the worker, in order that there might be greater understanding of the physical reactions the Land

Army worker would be undergoing, and that there would be a better preparation on the part of the supervisor to meet the conditions of camp life, created by the effect of the conditions attending the girl at work.

Our second object was in accord with the general purpose of the whole course. Namely, to give the supervisor some empirical knowledge of the work which forms a part of the camp organization. If the supervisor has even a slight knowledge of tools and garden processes, she will be a more intelligent supervisor in settling questions involving the camp garden operations, and in judging the capabilities of her camp garden director.

THIRD PERIOD

Observation of Farms

The third period of our course occupied two weeks in time and was divided into two parts. The first part was given over to visiting as many types of farms as could be arranged for, in order that the prospective supervisors might see in actual operation real farms; that she might come into contact with conditions likely to surround her workers; and that she might meet the sort of farmers she would later be doing business with.

We visited eight farms in all, ranging from the smallest farm where the owner is his own hired man, to the large farm employing many hands and utilizing the most up-to-date machinery, including tractors and electric milking machines. We visited farms doing "general farming," specialty farms making a business solely of chickens or dairying, and combination farms with a specialty of chickens in connection with fruit raising or some other enterprise. Most of these farms represented real commercial undertakings, but two of them were gentlemen's estates, run partly for pleasure and partly for profit.

It was the consensus of opinion among the women that these excursions were of great interest and value from a practical viewpoint. The farms were very carefully chosen, and were meant to exhibit the great diversity of farm enterprises and management. To the women who had little knowledge of such things, the visits were most illuminating, and the week's tripping called forth the greatest enthusiasm, and formed one of our most pleasant experiences.

This entire week of farm visiting was not all such a holiday, however, as might be imagined, for there was some work connected with it, and there came into play a new sort of action. There was the business of packing luncheons, of getting the entire camp into conveyances on time for a stated hour of departure, and the experience of meeting motor road troubles.

The discipline of the previous weeks told a very gratifying tale to those of us who were watching the development of the course. The women had learned to line up in thought and body to meet promptly the calls made upon them, and their team play was in marked contrast to the indecision that frequently characterized their response to a similar demand, in the beginning of the course.

A part of the Camp equipment was a new Ford one-ton truck, bought for the purpose of teaching the women the first principles of Ford engines and how to run them. Our driving lessons had already begun, and many of the women had held the wheel for an afternoon of practise. However, a regular Camp chauffeur had been appointed, and the operation of the car on these trips was put entirely into her hands. The only "breakdown" experienced was caused by a shortage of gasoline, which was due to the carelessness of the chauffeur. This experience afforded a valuable object lesson for the entire Camp membership.

This first half of the third period of training, having been spent in "seeing farming as it is," we planned in the second part to see farming as we are told it "ought to be." In other words, having actually visited the real farms and there observed the practise of agriculture as a commercial proposition, we next took a short course in agriculture at college.

The humor of this statement is obvious, but I do not mean to cast any reflections on the seriousness of our occupation during the week spent at Amherst at the Massachusetts Agricultural College.

Agricultural Course

During the month of July, when our entire course was being outlined and arranged for, President Butterfield of the Massachusetts Agricultural College responded very readily to an appeal for professional advice and help. While we desired to put some agricultural training into the course, we realized the ridiculous shortness of time available for this purpose, but realized also that it was not necessary to make agricultural experts of our supervisors. I visited Amherst, and consulted with Dr. Butterfield and Prof. Foord, in whose hands Dr. Butterfield put the practical work of aiding Wellesley in this undertaking.

After consultation, Prof. Foord and I decided upon the plan adopted. Namely, to devote one week to visiting selected farms for the opportunity of observing conditions in general practise, and then to visit Amherst and there get a digested account of the theory of farming. We agreed that the plan of coupling lectures and field work should be incorporated into the Amherst demonstrations, and after discussing in general the subjects to be covered, Prof. Foord was left with the task of outlining the Amherst course.

I cannot too strongly express my appreciation, and that of our whole Camp, for this contribution to our training scheme. It was intensive work and hard work, but the course was arranged with such system, the subjects covered were so interesting, and the attitude of the various professors so earnest and considerate, that the hard work was a pleasure. As one of our very most sedate women expressed it: "The week was one splendid thrill."

The experience of sitting in a lecture room listening to an exposition of the principles of apple pruning, or of milk producing, or of chicken raising and egg production, was a new experience to most

of us. To follow each of these discussions by a trip into the apple orchard where we learned to pick apples without harming the fruit spurs that produce the next year's crop, and then into the cow-barns, where we had exhibited the various breeds of cows and had pointed out their milking characteristics, and on into the poultry yards, and around the whole Agricultural College farm in like manner, afforded a rare opportunity.

I learned afterwards that some of the professors who co-operated in carrying out the program, were well put to it to prepare their subjects for presentation in such a way that the very limited time allotted for covering the work would prove worth while. They gave us one of the most extraordinary products of boiled down information, presented in popular yet technically correct language, that I have personally ever come in contact with.

I believe this course, outlined in full on a separate sheet, could well serve as a basis for various courses that might be desirable for Land Army workers. The up-to-date feature introduced by Prof. Gunness, in using movie films to make his machinery demonstrations more effective and interesting, were especially appreciated, as well as the detailed lists and characters and carefully selected bulletins that were prepared by our professors and given to each student.

I must not fail to report that Amherst College contributed this course free of charge to the Wellesley College Training Camp, in the interests of the Land Army movement, and that the various professors gave their services and took time out of their holiday for the purpose. Professor Foord spent much time in outlining and arranging the course, and was tireless in his efforts to insure its success.

The actual expenses of transportation to and from Wellesley and the cost of board while at Amherst were considerable. It seemed at first that we could not offer this trip as part of the course, but Amherst furnished board and lodging at a very reasonable rate, and Wellesley assumed the burden of the expense for the sake of affording this very valuable opportunity to the Camp members.

Before leaving the subject of the contribution to the course made by the Massachusetts Agricultural College, I wish to make note of the fact that Mr. Phelps' entire services were contributed by the Extension Service Department of this College in the interests of Massachusetts extension work.

FOURTH PERIOD

Farm Work

We now come to the fourth and last period of our training. At this point we put theory out of our consideration. We ceased taking notes and considered ourselves "students" no longer. The Camp was transformed into a worker's colony, and we made ready for business. The Camp chauffeur was put on regular duty, the household helpers and cooks were put on a new schedule, and the women went out to work in the field at two dollars each for an eight hour day.

Previously, the farmers in the vicinity of Wellesley had been approached, and we had signed up for work in advance. A number of the women were assigned to the Wellesley College War Farm, as Dr. Ferguson was in need of extra labor for harvesting. The women dug potatoes, harvested squashes and tomatoes and various other crops, cut corn, and filled silos. Some of the work was of the heaviest, and could not be done by the less robust members of the Camp, but there were a few of the women who proved equal to the heavy corn-cutting and the heavier squash harvesting, and one of the farmers testified that "we saved his life." In connection with the Wellesley War Farm work an opportunity was given for working at dehydrating and canning, and a few of the women especially valued this experience.

It may be noted that our Camp members were selected for their qualities as possible leaders and not for workers in the field. In consequence, we had a number of women who were physically sound, but who had not great muscular strength. We found that some of these women were considerably tried by the heaviest work, and we were able to make some valuable observations and deductions regarding the physical characteristics necessary for eight hour day women farm workers.

I will not rehearse the details of these last two weeks' operations, but I want to emphasize the fact that our graduating supervisors were introduced to all the conditions usually prevailing in a regularly operating camp Unit. Time books were kept with regularity, lunches were prepared daily, Camp work was arranged and detailed in consideration of the business in hand, and the women got an inside glimpse at least of a practical working Unit, and served apprenticeship both as leader and as worker.

Additional Subjects

Through these four periods of training there was interwoven instruction in three subjects which were closely connected with camp life, and in a fourth subject of unquestionable value to any supervisor. (1) The scientific practice of cooking and household economy. (2) Knowledge of the construction, use and care of a Ford car. (3) Camp organization and the principles of business in connection with camp administration. And (4) Emergency Aid and Camp Sanitation. This last subject occupied several half days during rainy weather. Definite time was set apart for lectures and practical demonstrations in all of these subjects, and instruction and practise extended through the Camp term.

In rotation the women served their time in the kitchen and dining room. Miss Holdahl had carefully prepared menus and written recipes; and in groups of three the women were installed as Camp cooks, and actually did the cooking for the entire Camp. During their time of service in the kitchen, they were relieved of all other duties.

Instruction in driving a Ford car was a part of the training, and each woman had at least one half-day lesson in motor driving under the personal direction of Dr. Nute, a Boston physician, who is

an expert mechanician, and who volunteered her services for this instruction. Dr. Nute also gave two very comprehensive lectures on the theory of a four-cylinder engine, with special reference to the Ford motor. An elaboration of the theory of a gasoline engine was later given by Professor Gunness at Amherst, and the Agricultural College machine shop afforded an interesting opportunity of seeing the different parts of a motor and of observing the make up of each individual part. Transmissions were exhibited in action, so that the working of the gears could be seen, and the cylinders and whole shaft of the motor put in motion, with working pistons demonstrating the engine cycle. This constituted a very illuminating part of our course, and was greatly appreciated by our women.

In the matter of camp organization there was a daily object lesson. Our Camp was run in accordance with systematic and business principles, and these principles were explained from time to time by the Director. The importance of routine schedules was emphasized, and the theory put in practise. Record keeping and the necessity for system in ordering and in the matter of accounts were discussed, and up-to-date methods outlined.

Emergency Aid and the subject of Sanitation were covered by Dr. Raymond. Lectures were given on all the topics indicated in the outline appended, and practice work was required in bandaging, stretcher-bearing and in other methods of meeting emergencies due to physical injury or inability.

When the supervisors' course was mapped out there was a two-fold character aimed at, in providing training necessary for Land Army camp leaders. In recommending a course for other training camps, I would emphasize these two points. They may be summed up as the "what and the "how." First we sought to point out the things that are clearly connected with this supervisor's work, and then to demonstrate how to accomplish the work. It is said that leaders cannot be trained, but are born. Our opinion is that all women cannot be trained to lead, but that some leaders can be trained, if in the beginning they possess a fitness for the task; and that all women would be better leaders if trained in the technique of their job.

Experimental Aspect of Wellesley Camp

Psychological Tests

I come now to the experimental aspect of the Wellesley Camp. I have already outlined the work of Dr. Dealy in relation to our garden operations, as this part of our experimental undertaking seemed best described in close connection with the work itself; and I will now refer briefly to the psychological tests made under her direction, and indicate the results. A full description of this work appears in Dr. Dealy's exhaustive report which we have had prepared by her, in order that an absolutely accurate statement of facts may be recorded in connection with our experiment.

This experiment was for the purpose of trying to establish a correlation between the psychological and the physical status of an individual, and her ability to perform the operations of farm labor.

Muscular development tests were made by Dr. Raymond, using the usual methods and apparatus for such work, and simple psychological tests were made by Dr. Dealy, using four of the Trabue written series. The entire Camp members were ranked, according to their scores in completing the psychological tests, and also according to the results of their physical measurements. This rank was based upon a computation of determining the average for each test. The final results showed a correlation between certain complex psychological tests and the muscular tests, and Dr. Dealy's opinion is that we may assume that these certain tests will fairly indicate the existence of muscular ability. Dr. Dealy suggests the value to the Land Army of psychological tests in selecting individuals for responsible positions, and believes that the women workers may be classified into general groups indicating their abilities, through the application of these tests.

Buildings

One of the important experiments made at the Camp was in the matter of buildings. The housing problem occupied a good deal of our attention, and the buildings which we developed are all reproduced in sketches drawn to scale and accompanied by "bills of material" and cost estimates. In making these final drawings, various changes were introduced which were based on our experience of camp needs. The Bath-house illustrates a practical and cheap building suitable for a camp where running water is available. The Barrel shower affords the simplest bathing facility, and is suggested for use where running water is not to be had. The barrel may be filled by syphoning water through a hose from the ground level, and each full hogshead barrel contains a good bath for six or seven women.

The latrine was very carefully worked out, and various changes were made before the final form was decided upon. It is reproduced together with specific directions for disinfecting, and this operation

should be performed at least every other day. Where a building for this purpose already exists on a camp site, it can generally be remodelled on the principles of this latrine. A point should always be made of having the pit about six feet deep, and slightly less in length and breadth than the base of the seat box. This seat box must also be made movable for the purpose of burning out the pit. It will be found that the mode of disinfection described will actually incinerate a large part of the waste matter, and will fumigate the building with such effect that disagreeable odors will be destroyed and flies, when present, will be suffocated and will be kept away by the fumes.

The Mess Hall and attached Kitchen and Pantry represents a form of building thoroughly practical in arrangement, and well suited to its purpose. The manner of joining the Kitchen to the Mess Hall exhibits an ingenious device for excellent ventilation, and for the escape of smoke and foul odors from the Kitchen. In constructing these buildings the roof is planned to project well over the sides and ends to prevent the rain from driving in the opening around the whole building. This opening is covered with common mosquito netting for summer use, and is provided with canvas curtains inside to let down in cold weather. The Mess Hall is meant to serve as a recreation hall as well, and is therefore provided with a solid floor, and may be heated by means of oil stoves, when necessity demands.

Sanitation

Some of the problems of sanitation most troublesome in a camp will be found connected with poor drainage, and the disposal of general camp refuse. Too much importance cannot be attached to the matter of carrying off water, and insuring a dry camp. Puddles of water serve as mosquito breeders, and improperly built cesspools or sinks act as a like menace. We built "sinks" at the corner of the Kitchen and Mess Hall, and along the whole side of the Bath House. They were constructed by simply digging out the ground and filling in first with large stones, and then with smaller ones, to the level of the ground. A board frame about eight inches deep lined the top of the pit, to prevent the sides from caving in. The top of this frame was even with the level of the ground, and was put in when the level of the stone was built up high enough to receive it and hold it in its proper position. Then it was filled with stone to the top.

A kitchen sink for a camp of thirty should be about five feet deep (varying with the character of the soil), by three feet square, and should have at least one side tunnel or stone avenue connected with it. These tunnels are made by digging narrow trenches running off from the sink. They are filled in at the bottom with stone, and then covered with dirt on top, so as not to disturb the appearance of the ground unnecessarily. The object of them is to increase the area of the drain without having an inconveniently large stone pit cutting up the ground surface.

In disposing of Camp refuse we experimented with a type of incinerator, but found it was not adapted to the use of such small camps. We finally improvised an incinerator, which was nothing more than a shallow basin made in the ground by digging out and filling in with stone, and then covered with an old piece of iron grating. This grating was supported by four corner stones, which elevated it enough to insure sufficient draft to keep a fire burning. On this iron grating we piled daily all the Camp refuse collected by the "Camp Police," and the tin cans from the kitchen were first put on to the burning pile, to destroy any decomposable matter, later thrown into a pit kept for this purpose, and eventually buried in the ground.

It must be noted that no particles of food should be thrown on this incinerator, as we found that a small camp does not produce enough inflammable waste matter to make a fire sufficiently intense to destroy food products. All food should likewise be strained out of water deposited in the sinks or open drains, as it attracts flies. We kept a strainer for this purpose, and threw the solid matter into the covered garbage can. Garbage may, of course, be buried when it cannot be utilized for feeding pigs.

In this connection I wish to state that our Camp bought a pig to serve the purposes of economy, but that we were obliged to buy food for the pig, because we did not produce enough waste food or garbage; and we believe that a camp of this kind can be run so that the waste food is reduced to a minimum, and that something is wrong when a household of thirty women can support a pig.

In regard to flies, we had much trouble in the beginning, in spite of the greatest care; but after having all food removed from the sleeping quarters (apples and other tid-bits) and kept out of the sinks and incinerator, and after successfully enforcing the rules for closed garbage cans, and against carelessness in leaving soiled strainers in the sinks, we succeeded in beating the flies to a retreat. Certain sprays recommended for use against flies served only as a deterrent, not as a preventative, and until the cause of their presence was removed we were bothered greatly by them. We cannot too strongly advise the necessity for keeping a cleaned up camp. The daily removal and disposal of all waste matter, and the careful keeping of the Camp premises, inside and outside, will insure against many bothersome and dangerous developments. We suggest keeping all baskets of apples, all fruit and other food, whether indoors or outdoors, covered with netting.

Household Appliances

In the matter of household appliances we made two interesting experiments. The first one was with cook-stoves. We bought one Perfection oil stove with three burners and one Florence stove with four burners. We found the latter, although a larger stove, used much less kerosene (consuming about three-quarters as much as the former), and gave a quicker and stronger heat. The Florence

stove is slightly more expensive than the Perfection, but we consider it superior. It is suggested that there is difficulty in getting burners for the Florence stove, but this difficulty can be done away with by keeping an extra supply of burners on hand, as they represent a very trifling cost.

Our second household experiment was with an iceless refrigerator, and we are very pleased to pronounce it a success. It was perfectly simple for us to procure ice at the Wellesley Camp, but there will be many Land Army camps where ice is unprocurable, and we felt this problem to be a very real one. We therefore had built two iceless refrigerators at a cost of about four dollars each. These are simply constructed and might be made for half the price by utilizing materials at hand. The principle of the iceless refrigerator is that of reducing the temperature by means of evaporation. A full explanation may be found in an accompanying pamphlet, and the specifications for constructing the refrigerator are there detailed. These directions may be obtained gratis from any of our Food Commission offices. We kept all of our perishable food for a camp of over thirty people in two of these iceless refrigerators, and when the temperature was ninety-six degrees, we had butter fit for the table and milk unspoiled.

It is important in using this system of refrigeration to keep the cooler where a free circulation of air is obtainable. We found it better for the refrigerator to stand in the sun, where it may be shaded if necessary, but where it has all sides open to the air, rather than to stand in the shade against a building or in a corner where the air is pocketed.

Beds

In connection with camp equipment, we made many minor experiments, and the results will appear in our equipment lists. The testing of the most practical beds for camp use was attended with some discomfort on the part of our campers. We put into use for comparison, fifteen regular army cots, and fifteen common iron beds with mattresses. The cots were used with double heavy blankets folded up under the sheets in place of mattresses, and were said by many to be more comfortable than the beds, during the first part of the season, but as cold weather set in, we found it impossible to keep warm in these cots. Layers of building paper and newspaper were used as protection, but did not serve the purpose, and our conclusion is that, whenever obtainable, regular beds or cots should be used instead of army cots.

One of the features of the Camp equipment insisted upon as necessary by Colonel Hall, was our mosquito netting covers for the beds. These were often objected to by the women, but we believe their general use advisable in tent sleeping quarters. It would be a misfortune if cases of malaria developed in the Land Army camps or could be traced to them, as a result of carelessness in this matter.

Tents

In regard to tents, we think the ordinary ten ounce duck tent with flies perfectly practical. We caution against paraffined tents, as being unduly warm, and counsel either having tents open at both ends or with ventilators in the end peaks. The ordinary method of guying a tent to pegs we would not employ, as the pegs easily loosen, and the tent is apt to blow over in a heavy wind. So-called "strong-backs," made by erecting a two by four rail on each side of the tent about one foot from the tent side, and two feet in height, will better serve the purpose. The fly is tied by running the rope over the rail, and the top of the tent side is tied by passing the guy rope under the rail. This will admit of guying the fly so as to leave a space of one foot between it and the tent side, where the guy ropes are attached. The bottom of the tent is fastened down by means of wooden pins.

Workers' Costume

The solving of the problem of suitable costume for the Land Army worker was attended with much discussion. We finally decided upon introducing a costume modelled along the lines of the England Land Army worker, and consisting of a pair of breeches, cotton long sleeved shirt with turnover soft collar, and a skirted coat. The material was a very heavy drab galatea cloth. Skirts were soon found impracticable, and various styles of breeches were tried and their points noted. The two most necessary points to embody in suitable breeches are length in the seat to admit of bending over freely, and freedom in the knee, so as not to constrict the leg muscles and fatigue the worker. Our breeches embodied the greatest number of good points of any breeches tried, but should be somewhat modified in shape at the knee. Our coat was used only when appearing in public, and was designed to complete the costume for the street. Our shirt was found most practical, being an ordinary small sized man's shirt of drabbish collar. Such a costume as we suggest could be manufactured to sell for about six dollars, including the shirt.

As for hats, I would recommend for the field a ten cent straw hat procurable in many general country stores all over the country, and easily fashioned into a becoming and practical shape. For a "dress" hat we had a cheap cloth hat of neat appearance that costs eighty-five cents each.

In the matter of shoes, we feel some uniform specifications should be insisted upon, as in our United States Army. A three-quarter height shoe with a broad, thick sole, and one inch heel, seems best adapted to our use. If the Land Army would arrange to have made some such shoe as was made for us, modelled on the Munson Army last, and manufactured to sell at a reasonable price, the question of sore feet would be practically eliminated, and the workers' fatigue would be greatly reduced. We used the boy scout shoes rather generally, and found them reasonable and fairly satisfactory. The use of high heeled shoes should be unnecessary to

caution against, but they may be seen on some of our Land Army workers in different camps. It may be noted that canvas shoes were not found practical, as they easily wet through. It was also demonstrated that every worker needed two pairs of shoes, to ensure having a dry pair for use the day after being caught in a heavy rain.

Camp Regimen

In regard to matters pertaining to camp regimen, we developed the usual difficulties common to community life of that sort, and we put into practise various methods of meeting these difficulties. We found one of the valuable specific for camp unrest and rebellion against regulation was the Camp Conference. I would recommend that every camp supervisor establish in her camp this modern method of preventing discord and of promoting harmony. At these conferences the workers advance their opinions, lodge their protests, and get the supervisor's point of view. This interchange of viewpoints is most valuable and even essential for the promotion of happiness and contentment in the camp, and for the desirable development of a sympathetic understanding between supervisor and worker.

The Squad System has already been described, and was tried out as an experiment in our Camp. We found in this system the easiest and most efficient manner of directing and controlling a number of workers, and we believe thoroughly in establishing it in principle even among small groups.

Meal Service

We developed a system of serving at table which I think worthy of mention. It proved quicker than the cafeteria method and required less room. It was that of appointing a steward for each table of ten women. These stewards took the food from the pantry and placed it on the table. Then the food was passed from one to another (the meat starting from one end and the vegetables from the other), and each helped herself to the amount she desired. This method avoided waste, and hastened service. Finally the course was removed by the stewards and replaced by the next course. When drinks were served they were poured at one end of the table, and passed along. This insured hot drinks for all, with fewer stops in the service.

Discipline

The problem of discipline is one of the most insistent and yet most difficult, and I think the members of our Camp agree that rules are necessary, and that some sort of provision for keeping the girls "up to the mark" is imperative. The esprit de corps of a camp is a manufactured thing. It cannot be left to chance. It will be lacking unless it is expressly cultivated, and unless some compelling force tends to awaken and to foster it.

Our women were picked women, and they felt the significance of this fact, and at the beginning of our course I put to vote the question of having some sort of military drill introduced into the program. I personally was not certain that it would be advisable or profitable, but the women voted to have it instituted, and I procured the services of Sergeant Young of the Charleston Navy Yards for the purpose. We had drill three times a week for about five weeks. The simple foot movements were given, and the simple line formations taught and practised. In connection with the drill, Sergeant Young gave the women some exercises calculated to limber and to harden them, and we were all surprised to find every woman in the Camp shoulder bound and generally muscle bound. The drill was greatly enjoyed by the women, and they all said it sharpened and coordinated their powers of thought and action. I have not worked out the possibilities of introducing drill into the already over-full camp life, but I think it important that some plan be devised for utilizing either this form of discipline or of providing a substitute for it.

Transportation

With the mention of one other experiment, I have enumerated the principal subjects that were investigated at our Camp. This last subject is that of transportation, and I feel that we have little to contribute to the general knowledge concerning it. In the beginning I made an extended investigation into the usual methods of transportation in our Land Army camps, and I concluded that most of the transportation difficulty was due to overloading and to inexpert driving and care of the car. I therefore advised buying a new Ford motor truck, with a liberal carrying capacity, with solid rubber rear tires, and with a low geared engine. This car provided us with a vehicle easily able to transport fifteen people without overloading, and the low geared engine was proof against speeding.

I will not discuss the details of our experience, as I think it was too limited to be of much value. The car did us good service, but was very tiring to ride in, and for a long distance would greatly add to the fatigue of an already hard day. It would be impossible to make an exhaustive study of the transportation problem in addition to the many problems worked out in our Camp this summer, and I regret that I have not a more definite contribution to offer in connection with this subject.

RECOMMENDATIONS

In concluding this report, I desire to make several recommendations and to outline certain ideas formed from my experience as Director of the Camp.

Land Army Policies

First of all I should like to suggest that in outlining courses for Land Army leaders, there should be some place provided for teaching Land Army principles and standards. I believe it should be made evident what the Land Army stands for and purposes. The general policy of internal camp government and the desirable policy in meeting the farmer and in carrying out the Land Army purpose and ideal should also be definitely stated and made clear. There should be instruction regarding the physical and social welfare of the worker, specific information regarding the proper diet of a woman farm-worker, and concerning the amount and the kinds of work she can safely undertake. Detailed directions for the proper housing should be given, and lastly, it seems to me an idea of what the farmer's relation is, and what it may be, to the community in which he lives, would be a most desirable point to have emphasized for the benefit of the camp leaders.

All of these subjects involve fundamental principles, and might fittingly be defined for the whole country by the National organization. Unless they are made clear, we fear the various sections of the country served by our Unit system will not be served in that definite manner and uniform fashion that ought to stamp such a helpful and potential movement as that of the Woman's Land Army.

Moreover, I believe, from my experience in conducting the Wellesley College Training Camp, and after close conference with the women members, that the information dealing with the larger aspect of the subject, is just as important as that dealing with the specific task of administering the business of the camp household. Our leaders should know about the farmer in his farm setting, both in respect to his business of agriculture, and in respect to his community relations. Fortified with this knowledge, the leader can far better understand how to meet the farmer in a business way, and may be able to do him a greater service in helping him to a larger social outlook, and to a greater interest in his community life. I realize this is not one of the primary objects of the Land Army, but I think it offers a very possible field for extending our service.

Food

In regard to the matter of diet, I think we should prepare a Woman's Land Army hand-book, and provide in our supervisors' courses for some practical demonstrations of food preparation. The science of dietetics is invaluable in the preparation of such menus as our Land Army must provide for its workers, if we are to be

sure that our women are well nourished and fed on balanced rations that have been worked out with reference to the relative value of proteids, carbohydrates, fats and other food properties. Our rations should be defined by dietetic experts who understand the science of combining in proportion the various food values, to meet the need of farm workers, and to supply the bulk necessary for sustaining a woman laboring in the field. In addition to nourishing our workers we should give them really satisfying food, at a minimum cost. This is certainly not a matter that can be left to a chance cook or dietitian. Our Government has spent much time on the subject for our men in the Army and the Navy, and has published definite instructions in regard to the sort of rations suitable for a soldier or a sailor. And our Woman's Land Army organization, that proposes to put three hundred thousand women in the field, surely needs to consider this important subject with the same care and thoroughness.

In the training courses it is not possible nor desirable to teach the science of dietetics, but it is possible in a very short time to teach an intelligent woman how to cook simple things, even though she has no previous knowledge of cooking. If the work is laid out with system, if all instructions and recipes are written and given to each learner with careful explanations, and if there is competent oversight of the work, those preparing supervisors can learn to produce very palatable meals, and their experience in this line should contribute much to their ability for intelligent oversight of the food question in camps.

Professional Service in Camps

I should like to say one word regarding the necessity for employing trained people for tasks in camps. I realize it is quite out out the question to organize a camp of ten, with a paid cook and a paid chauffeur; but I believe it would be profitable to organize a camp of thirty, with a paid woman in each of these positions. I contend that it is cheaper to pay a trained cook forty or fifty dollars a month and her board, than to put one or two of the camp workers in the kitchen for this work. The professional cook will accomplish as much as two or three of those untrained workers, who might be earning for the camp two dollars a day if sent into the field. The same argument holds in regard to the camp chauffeur, and I suspect that if the Woman's Land Army were to organize a motor corps, and accept only thoroughly trained women chauffeurs and mechanics for the service, the difficulties and expense of camp transportation would be greatly reduced.

Administration of Camps

In regard to the administrative system of Land Army camps, I should recommend very definite detailing of duties for leaders and workers, and clear specification concerning them. I most heartily urge the custom of camp conferences as a feature of the Land Army policy, and I hope the National Board will recognize the necessity and value of these conferences, and recommend them, in outlining general administrative suggestions.

In connection with camp organizations, I think some sort of fire drill should be devised, and this much neglected precaution should be considered, and practice for meeting the emergency of fire, should constitute a part of each camp system.

The subject of rainy days occupations presents a field for earnest enquiry, and while I do not pretend to answer this question, I would suggest that fire drill and physical drill could both be worked into rainy days with profit.

Camp Garden

The camp garden is one camp feature that has been left more or less to chance and I should like to see a plan worked out for camp gardens suitable to every sized camp, and recommendations sent from our National Board for making the garden a part of all camp organizations. The plans that we are submitting for camp gardens were drawn with this idea in view, and we hope the lists of seeds and tools so carefully compiled by Mr. Phelps, and the quantities suggested in our outline, will constitute at least a starting point for this work.

The camp garden seems to me to offer an opportunity for meeting various internal camp problems. It provides a way for occupying the women profitably who are left at home through lack of outside demand, or through partial unfitness for heavy labor. It also establishes a means for hardening off our workers when they come to us as raw recruits, and for giving them some instruction and practise in garden operations and tool handling. It is obvious that we cannot support a garden for these purposes, unless it is planned and managed for profit. Hence I would suggest that we consider the commercial value of the garden in connection with our camps, and plan them not only as a source of vegetable supply for the camp households, but with a view to maintaining them without economic loss to the camp, for the purpose of meeting the needs above described.

The need for hardening off our workers was made evident to us this summer, and I think more care should be given to that point than is usually given in the Land Army camps which have come under my observation. The whole question of the workers' physical fitness is most important. In our Wellesley Camp we accepted several women whom we rated "C" physically, as we wished to test their endurance in this work, in order to establish a line for rejection. In every case the women were organically sound, but showed indications of being somewhat under par in health. While these women gained in weight and improved in health, owing to our care in not allowing them to overdo (a care that could not be exercised in our camps), they proved unequal to the work, and as a result, I want to recommend that a very high standard of physical fitness be insisted upon in accepting women workers. These workers whom we rated "C" would ordinarily be classed as average women in health, and it was only after careful professional examination that any possible under average rating would be given them.

Care of Feet and Teeth

Particular attention should be given to the condition of the women's feet and teeth. Foot trouble is a common cause of disability, and I find that trouble with teeth is more prevalent in camps than is commonly supposed. In assisting, this summer, to determine the cause of the economic losses of a certain Land Army camp, it developed that an alarmingly large loss came through the diminished earning power of the camp as a result of giving girls a day off for attention to aching teeth. The camp lost the two dollars wage of the girl in each case, and yet paid the girl her fifteen dollars for the month. The importance of the matter is recognized in our Army, and special provision is made to meet it.

Workers' Social Welfare

Concerning the workers' social welfare, there is an opportunity for much constructive thinking. It is evident to me that most of our workers do not want to be entertained, but that they want to be allowed to "entertain" themselves. What recreation should be provided in camps I am not prepared to say, but I should like to suggest that a little music be provided for cheer, and that an agricultural library be made a part of every camp, consisting of the United States bulletins, and the various State bulletins. I found a great desire among our women to know more about the business of agriculture, for the service of which they were employed; and although many of our girls will doubtless not be interested in reading agricultural bulletins, these bulletins can be procured without cost, and I think if put into the camps will be more widely read than we might suppose.

Efficiency Methods

Among the many camp matters discussed, the small problems of the household have occupied much attention, and I think the answer to most of the questions involved, may be found in the modern methods of efficiency now so generally practised. It is certain that system is imperative if work is to be accomplished in a business-like way, and that waste of thought and motion can be materially reduced through the establishment of a good system. The necessity for care in the arrangement of kitchen and other camp departments, is demonstrated by our need for quick and good service; and I think an adoption of the watchword "routine" would save the camp supervisor much work and worry, and would greatly reduce her nervous fatigue.

Size of Units

Regarding the size of Units, there may well be some prescription. In my estimation, the limits of size should be determined by State or National authorities, after a careful business survey of camp economics. I believe there is a maximum size of camp that

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marks the limits of efficient service and the dividing line between financial profit and loss, just as there is in all business undertakings. There is of course, also a minimum size of camp that touches the line where the existence of a camp is justified or unjustified.

Team Work

Concluding these recommendations, I want to mention the importance I would place in camp life, on the development of team play. Team work and the spirit of co-operation are so essential to the success of any undertaking involving the action of many individuals, that it has been increasingly emphasized in all our large business plants, and has been one of the keynotes of success in carrying on our great war work, both Governmental and public institutional. Methods of developing good team play and means for promoting a co-operative spirit should definitely be considered, and at once put in practise throughout our whole Land Army movement. The presence of this spirit will make a camp; the absence of it can destroy one.

Tribute to Co-operators

Finally, I wish to pay tribute to our United States Marines, through whose agency, both in Washington and locally in Boston, our Camp received such material help, and I wish to express my appreciation of the support I received from the Camp members, from my co-workers, and especially from the members of my Executive Committee.

Respectfully submitted,

EDITH DIEHL,
Director.

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APPENDIX TO REPORT OF THE
WELLESLEY COLLEGE TRAINING CAMP AND
EXPERIMENT STATION

FOR THE WOMAN'S LAND ARMY OF AMERICA

1. Outline of Course of the Wellesley College Training Camp.
2. Outline of Supervisors' Course recommended to the Woman's Land Army.
3. List of Lectures, Wellesley College Training Camp.
4. Outline Supervisors' Garden Course, Wellesley College Training Camp.
5. Outline Agricultural Course at Massachusetts Agricultural College.
6. Outline Course Emergency Aid, Hygiene, and Camp Sanitation.
7. Plans for Mess Hall and Kitchen (3).
8. Plans for Latrine (2).
9. Plans for Bathhouse (2).
10. Specifications for Mess Hall and Kitchen.
11. Specification for Latrine.
12. Specifications for Bathhouse.
13. Bills of Material and Cost Estimate of Mess Hall and Kitchen.
14. Bills of Material and Cost Estimate of Latrine.
15. Bills of Material and Cost Estimate of Bath House.
16. Equipment List for Mess Hall.
17. Equipment List for Kitchen and Pantry.
18. Equipment List for Sleeping Quarters.
19. List of Groceries and Staples for Camp of from Ten to Fifty.
20. Plan for Camp Garden for Unit of Ten.
21. List of Seeds and Directions for Camp Garden for Unit of Ten.
22. List of Tools for Camp Garden for Unit of from Ten to Seventy.
23. List of Menus for Camp Use.
24. List of Recipes for Camp Use.
25. Cost of Food for Wellesley College Training Camp.
26. Description of Barrel Shower.
27. Directions for Care and Disinfection of Latrine.
28. Directions for Building Cesspool.
29. Notes on Sanitation for Camp Use.
30. Daily Routine, and Camp Lists of Duties.
31. Specifications for Tents, and Directions for their Care.
32. Sample Physical Examination Card, Wellesley College Training Camp.
33. Sample Registration Card, Wellesley College Training Camp.
34. Specifications for Iceless Refrigerator.
35. Specifications for Fireless Cooker.
36. Dr. Dealy's Report.
37. Records of Students in Psychological and Physical Tests.
38. Set of Psychological Tests given at Wellesley College Training Camp.
39. Financial Statement of Wellesley College Training Camp.
40. Inventory of Property of Wellesley College Training Camp.
41. List of Graduates of Wellesley College Training Camp.

NOTE:—This material may be procured at the Federal Office in Washington, and at the National Office, 19 West 44th Street, New York City, after February 1st, 1919.